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COMMUNICATIONS

EXFOLIATION OF THE SUPERFICIAL LAYER OF THE LENS CAPSULE (VOGT) AND ITS RELATION TO GLAUCOMA SIMPLEX*

BY

EIVIND HÖRVEN

FROM THE OPHTHALMIC SECTION OF THE UNIVERSITY CLINIC IN OSLO. CHIEF: PROFESSOR HAGEN

My former chief, Professor Hagen, has asked me to give an account of my investigations respecting exfoliation of the superficial layer of the lens capsule and its relation to glaucoma simplex, and I feel deeply thankful for the honour thus shown me. Meanwhile I fear that much of what I have to say is already well known to my hearers, and therefore perhaps of little interest.

It was in 1925 that the Swiss author, Vogt, described the disease to which he later gave the name "Exfoliatio superficialis capsulae anterioris," in which we see a round, grayish-white disc on the surface of the lens in the pupillary area ("Pupillarscheibe"). Outside this there is a part where the capsule seems normal, and then comes in the periphery a ribbon-shaped, denticulated, whitish portion resembling a coronet. Besides these changes there are seen in nearly all cases scurf-like flakes on the pupillary border.

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Vogt had already in 1921 depicted this condition in his "Atlas der Spaltlampenmikroskopie," but he then mistook it for a remnant of the pupillary membrane. The flakes on the pupillary border and the central disc on the surface of the lens he described in 1923, and then regarded them, with doubt, as an exudate resulting from an operation the patient had undergone.

In Scandinavian literature these flakes on the pupillary border had been described by the Finnish writer Lindberg in 1917, and the change on the capsular surface by the Norwegian Malling in 1923, but neither of these works aroused any attention and they are not mentioned by the authors who have later dealt with the subject.

Since Vogt's first description some 40 or 50 papers on the disease have been published, and I shall now try to give an account of these and of my own investigations.

In English literature the subject has received little attention. In 1932 Sohby Bey published in the *Brit. Jl. of Ophthal.* a "Contribution to the study of Exfoliation of the Lens Capsule or Glaucoma capsulo-cuticulare, with anatomical preparations," and John Foster described a case of glaucoma capsulo-cuticulare in 1933.

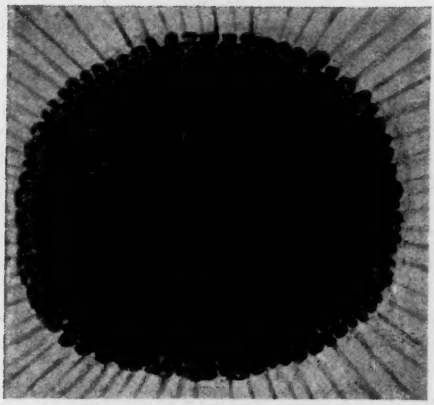
The clinical picture of the exfoliation comprises: (1) the flakes on the pupillary border, (2) the central disc and the peripheral band on the lens capsule and (3) changes in the zonule of Zinn, to which I shall revert later.

The flakes on the pupillary border resemble very small particles of scurf, situated on the pigment epithelium. They are never seen on the iris stroma itself, even when the stroma is dark in colour, so that the white particles should be easily visible. On the other hand, they can be seen on the posterior surface of the cornea, and where we have remnants of the pupillary membrane they can be seen lying close together on the fibres, like rime on a telegraph wire. They are constantly changing in number, some disappearing, others coming instead, and after an operation they may disappear altogether. They must therefore be assumed to lie quite loosely attached to the iris. If the patient is subjected to iridectomy, there may be seen immediately after the operation dense masses of these flakes on the pigment epithelium along the coloboma edge. This would seem to indicate that they had been there also before the operation and gives reason to believe that they are as a rule to be found dispersed over the whole of the pigment epithelium in the posterior chamber.

These flakes never occur as an isolated phenomenon. They appear only together with a change in the lens capsule. They are therefore considered to be of secondary character, having originated from the surface of the capsule and having detached

themselves spontaneously or been rubbed off during the movements of the pupil and afterwards depositing themselves on the pupillary border.

The central disc on the anterior surface of the lens has the shape and size of the pupil. Vogt has been able to show that it decreases in size when the patient is treated for some time with miotics, and he therefore believes that its size corresponds to the minimum dilatation of the pupil. The disc is always of uniform structure, in contrast to the peripheral band, which is usually granulated, and the reason for this difference in structure is

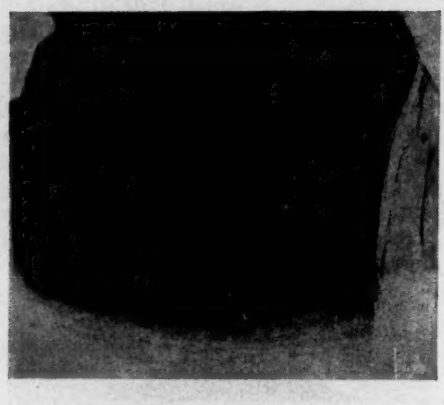


Vogt: 1923.

unknown. In some cases the disc may be very difficult to see, showing itself only as a faint milky fleck without sharply marked boundary. It can then be most easily seen when the beam of light is directed tangentially upon the surface of the lens. In other cases it is conspicuous, with a clearly defined edge, which is often curled up.

Outside the disc comes an area where the lens capsule appears quite normal, but very often one or more bridges stretch across this area from the disc to the peripheral band, these bridges being then of granular structure.

The peripheral band is the most prominent feature of the changes in the lens capsule and is therefore the most easily seen. Mostly it lies in the outer third of the distance from the anterior pole of the lens to the equator, but it may also be situated nearer to the centre or quite on the periphery. The width of the band may vary, being in some cases very narrow, in others broad.



Vogt: In the area of a coloboma.

The boundary towards the equator may assume two different forms: either it is quite indefinite, so that the band with uniformly decreasing distinctness merges into a capsule of normal appearance, or else it is clearly visible and is then in almost all cases denticulated, the projections having an exactly radial direction and being often high, narrow and strikingly regular. The cause of these peripheral projections is not known. Vogt asks whether they might not possibly have some relation to the attachment of the suspensory ligament. No curling up or exfoliation of the equatorial border has ever been observed.

In almost all cases the distinctness of the band increases uniformly from the equator towards the axial edge. This latter is always sharply defined and in form either curved or undulating or else denticulate, the projections then being radially directed, but according to my experience never so high or regular as the peripheral projections. These projections are by Vogt and Busacca believed to be due to the configuration of the posterior surface of the iris. The axial border may be smooth, but a smaller or larger part thereof is often loosened and curled up.

In some particular cases we see within the axial border another, considerably less conspicuous band, composed of very small granulations, which seems to lie deeper in the capsule than the peripheral band itself. It gives the impression of being of newer origin than the more peripherally situated one, and Vogt and others regard this as representing a new degeneration of the lens capsule at a place where the earlier exfoliation has been scraped away.

The peripheral band is invariably present in all patients who have exfoliation. It is the only member of the triad consisting

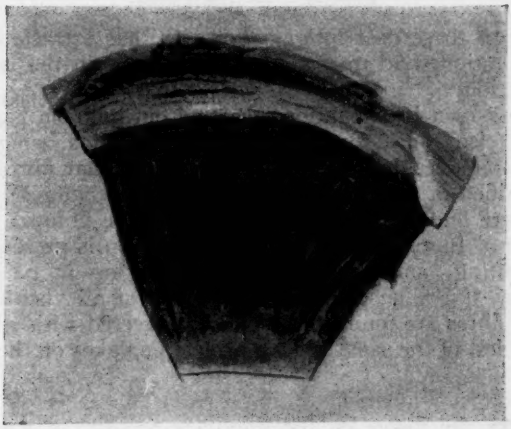
of flakes, central disc and peripheral band which is constantly present, and we therefore cannot preclude the existence of exfoliation in a patient before we have an opportunity of ascertaining that the peripheral band is absent.

The cause of this peculiar division of the changes in the capsule into a central disc and a peripheral band separated from the disc by an unaffected space is by Vogt and others thought to lie in the movements of the pupil. Originally the affection of the capsule extends over the entire surface of the lens, but afterwards (or perhaps according as it develops) the growth is rubbed off in the parts touched by the edge of the pupil during its movements.

If this were correct, it should follow that the central disc would be present just as constantly as the peripheral band. This is, however, not the case. In about 10 per cent. of our cases we cannot detect it. Whether it is really absent in these cases, or is merely so little developed that we cannot see it, we cannot with our present appliances as yet decide.

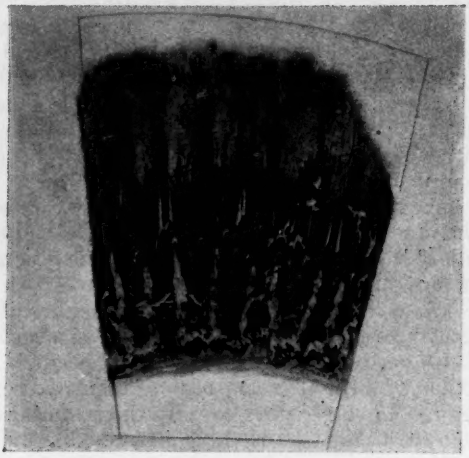
When we have had an opportunity of investigating several cases of exfoliation, we are struck by the fact that the appearance presented in all of them is similar, but we must admit that we do not know anything as to the development of the exfoliation. We do not know its first beginning and neither do we know whether it starts over the whole surface at once or begins, for example, in the periphery and spreads out therefrom.

That together with the affection of the capsule there also occurs a typical change in the zonule (of Zinn) has hitherto not been generally known. Trantas in 1929 described a case in which



Drawing of the zonule of Zinn.

iridectomy had been performed and the lens displaced so that the ligament could be seen, the fibres being then found to be densely covered with scurf-like flakes. Vogt in 1931 depicted a case in which iridectomy had been carried out, so that the suspensory ligament was visible, and he remarks: " Im Kolombereich sind die Firstlinien der Ansätze der Zonulafasern sichtbar. Als graue parallelle Linien liegen sie in der Fortsetzung des Häutchens." And it is surely not unreasonable to suppose that the same change has occurred here.



Drawing of the ciliary body.

Neither of these descriptions, however, has attracted any particular attention, and they are not mentioned in the later works on exfoliation.

From my own investigations, carried out both on patients and on eyes excised on account of absolute glaucoma, where the iris had been removed in its entirety and the zonular fibres exposed, I feel justified in asserting that these zonular changes are of constant nature and form an integral part of the clinical picture of exfoliation. In excised eyes where exfoliation is present they are never wanting, and neither are they wanting in patients with exfoliation, if the suspensory ligament is at all visible. In all cases the fibres are found to be densely covered with white scurf-like particles, of the same appearance as the flakes on the pupillary border.

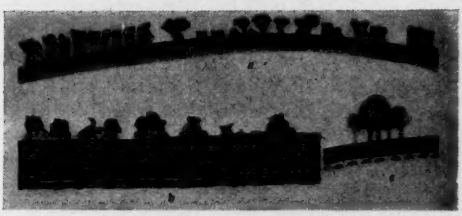
Whether this affection of the zonular fibres is of secondary origin, like the flakes on the pupillary border, or whether it is

primary, a degenerative change in the fibres quite analogous to the affection of the capsule, we do not yet know.

The histological picture of the exfoliation is known chiefly from Busacca's and Vogt's works. Busacca claims to have demonstrated that the exfoliation consists in the deposition of a granular substance which he presumes is normally to be found in solution in the aqueous humour. Vogt assembles the changes he finds into three type groups:—

(1) The capsule is everywhere of normal thickness and structure, but a superficial lamella detaches itself as an exfoliation.

Vogt: Pastry-like part of the capsule.



Section showing bud-like exfoliation of hyaline layer of anterior lens capsule. From Busacca.

(2) The capsule is in some parts thickened and puffy, so that it looks like pastry.

(3) These puffed-up parts of the capsule gradually get rubbed off, so that it again becomes smooth, but considerably thinner than normal.

In one single case he also found vacuoles lying deep down in the capsule.

As regards age, all the patients showing exfoliation are elderly, only 4 or 5 cases being recorded in persons aged between 40 and 50, and in younger persons it has hitherto not been observed.

Relation to Glaucoma

As early as in 1917 Lindberg was aware that the flakes on the pupillary border occurred more frequently in glaucoma patients than in others. He says:—

" Among 60 cases of chronic primary glaucoma I found these flakes in 50 per cent. I do not thereby pretend to come forward with a new glaucoma symptom. On the contrary, it is my opinion that the flakes in most cases are the result of an earlier exudation."

Likewise Malling in 1923 draws attention to this circumstance. He says :" The disc seems preferably to appear in cases where the ocular tension is temporarily or permanently increased. It has therefore only once or twice been observed in patients in whom the tension was found on examination to be normal, while among 81 eyes with increased tension it was detected in no less than 33. It must therefore probably be permissible to conclude that the formation of film and increase of tension are in some way or other connected with each other."

And from Vogt's first report of cases, published in 1925, it is seen : " That the affection represents no rare symptom of chronic glaucoma. For of twelve persons affected no fewer than nine are suffering from advanced chronic glaucoma." And one more was later attacked thereby.

Vogt therefore at once submitted the question :—Is the exfoliation the cause or the consequence of the glaucoma? And in his first paper he was inclined to accept the latter alternative.

But in his next, in 1926, he declared that the exfoliation must be the cause of the glaucoma. He has since steadily maintained this view, and he has chosen a special name for this form of glaucoma: Glaucoma capsulare (capsulo-cuticulare).

The cause of the glaucoma is by Vogt supposed to be that the flakes which have been rubbed off choke up the ducts for the aqueous humour. The flakes, which occur in relatively large numbers, are difficult to dissolve and non-absorbable and they deposit themselves in course of time in the ducts and thus lead to a rise of tension. The more so because in most cases we have to do with persons of advanced age in whom these ducts have more or less deteriorated.

Busacca and others agree with this view.

If I am right in maintaining that the zonular changes are constant, we could also explain the occurrence of the glaucoma as being in accordance with the diaphragm theory.

Clinically the capsular glaucoma always manifests itself as a chronic glaucoma simplex. I have been able to find only two exceptions: Busacca's Case 13, which is designated as " Entzündliches chron. Glaukom," and Foster's case, which is described as being subacute.

The relation between exfoliation and glaucoma must be regarded from two points of view :—

(1) How frequently is glaucoma met with among the patients with exfoliation?

Vogt 1925:	12	pat.	with	exfol.,	of	whom	9	had	glaucoma.
Vogt 1931:	45	„	„	„	„	„	34	„	„ (about 75%)
Busacca 1927:	30	„	„	„	„	„	27	„	„
Trantas 1929:	42	„	„	„	„	„	14	„	„
Rehsteiner 1929:	78	„	„	„	„	„	50	„	„
	(collected from literature)								
Grzedzielski 1931:	156	pat.	with	exfol.,	of	whom	90	„	„
	(collected from literature)								
Baumgart 1933:	46	pat.	with	exfol.,	of	whom	29	„	„ (63%)

The figures show good concordance and we may regard it as established that between 60 and 70 per cent. of the patients who have exfoliation are at the same time suffering from glaucoma.

The next important question then is:—

(2) How often do we find exfoliation in the patients suffering from chronic glaucoma (glaucoma simplex)?

Among 60 cases of chronic, in part absolute, primary glaucoma Lindberg found flakes on the pupillary border in 50 per cent.

Malling found a film on the lens surface in 33 cases among 81 eyes with increased tension. It would seem, however, that from chronic glaucoma (glaucoma simplex)?

Busacca examined 38 glaucoma patients, all over 60 years old, and found exfoliation in 60 per cent. of them.

Vogt (Dr. Rohner) found among 185 cases of so-called primary glaucoma treated in the course of 4 years 13 cases of glaucoma capsulare, *i.e.*, 7 per cent.

Reckoning with only the 150 cases of chronic glaucoma, the percentage of glaucoma capsulare in chronic glaucoma will be 8·6.

Blaickner found among 84 carefully examined glaucoma patients 5 patients with glaucoma capsulare in both eyes. Most of his patients had been subjected to iridencleisis with meridional iridotomy, so that the lens surface could easily be examined, and his figures should therefore have some weight.

Baumgart examined 59 cases of glaucoma simplex, where the pupils had been dilated by subconjunctival injection of adrenaline, and found exfoliation in 29 cases, or 49 per cent.

I have myself examined with the slit-lamp altogether 150 patients, all of whom had been operated on in the Ophthalmic Section of the University Hospital by iridencleisis with meridional iridotomy by Holth's method. All of them were examined after the operation, so that the periphery of the lens was well visible in the coloboma area.

Of these 150 patients 55 were women and 95 men.
The distribution according to age was:—

40—50 years	...	3	(2 positive,		1 negative)		
50—60 „	...	11	(10	„	1	„	)
60—70 „	...	66	(57	„	9	„	)
70—80 „	...	58	(47	„	11	„	)
80—90 „	...	12	(12	„	0	„	)

The result of the examination accordingly was that of these 150 patients operated on by iridencleisis for glaucoma simplex 128 (85·33 per cent.) had typical exfoliation of the lens capsule.

I have also examined a series of patients with glaucoma simplex before the operation, under mydriasis produced by instillation of "linksglaucosan." There are altogether 43 cases, representing the total number of patients treated for glaucoma simplex at the hospital during a certain period of time. Among these I found exfoliation in 40 patients, or 93 per cent.

It is difficult to give any explanation of the enormous difference between Vogt's and Blaickner's findings (about 5 per cent.) and my findings (80-90 per cent.). The most reasonable explanation probably is that the material dealt with is not quite the same, as it is possible that the form they call chronic glaucoma is not identical with what we here call glaucoma simplex—that there may, for example, among their cases be many chronic inflammatory glaucomas, a form which seldom occurs here.

From the results of my investigations I am more and more inclined to believe that the exfoliation offers us an excellent basis for the classification of our glaucomas, seeing that glaucoma simplex must be regarded as identical with glaucoma capsulare, while on the other hand exfoliation does not occur in cases of acute glaucoma or chronic inflammatory glaucoma.

I shall now proceed to deal with the next important question: How frequently do we find exfoliation of the lens capsule in old persons who have not glaucoma simplex?

On this point opinions are divided, and the figures furnished by the various investigators differ greatly from each other.

Handmann writes in 1926: "Although I almost every day examine elderly persons by aid of the slit-lamp, and since I saw my first case have directed attention especially to this matter, yet I have since 1919 seen only 3 cases."

Lindberg examined the pupillary border in 60 normal cases and found flakes in 4 of them, or about 6·6 per cent.

Rehsteiner examined 238 inmates from 7 old age homes in Zürich and its neighbourhood. All of them were examined with the slit-lamp, and in 148 cases one or both pupils were dilated

by means of homatropine or cocaine, while in the others these agents either could not be used or else did not take effect. All the persons examined were over 60 years old.

Among these he found 4 cases of exfoliation, and of these 4 one was blind from glaucoma, two had increased tension and only one was without signs of glaucoma. Taking all the cases together the incidence is 4 in 238, or 1·7 per cent.

In a later work (1931) Vogt remarks that Rehsteiner's figures represent the minimal value, because he appears to have directed attention mainly to the flakes on the pupillary border, and they are not constantly present.

This seems to conflict with Rehsteiner's own words. He states expressly that the pupil was dilated in order that the largest possible part of the lens surface might be surveyed, and this must be said to indicate that his attention was directed to the lens surface itself.

Trantas examined 112 women and 125 men, all over 55 years of age and selected from among 1,540 new patients. From the report it does not appear how the selection was made. Among these patients he found exfoliation in 36, and on renewed examination in a further 6, so that there were altogether 42 cases of exfoliation. Of these 42 patients 14 had glaucoma.

He adds that in reality the frequency of exfoliation was much greater, because a large number of the patients were examined without mydriasis, and the exfoliation may thus have been overlooked. He therefore believes one would not be far from the truth in assuming that at least 25 per cent. of all persons over 55 years old have exfoliation of the lens capsule.

Baumgart examined 611 patients at the hospital in Bologna, all over 50 years of age, and among these she found exfoliation in 46 cases (7·5 per cent). She remarks that the figure should possibly be higher, as mydriatics could not be employed in all cases. Of these 46 cases of exfoliation 29 showed glaucoma. The total number of glaucoma cases in the series seems to have been 59. Her figures might therefore be re-arranged as follows:—

Of 611 patients			46 had exfoliation	(7·5%)
including 59 glaucoma patients,	of whom	29 „	„	(49%)
leaving 522 patients without glaucoma,	„	17 „	„	(3%)

The conditions of examination have not been quite the same for the two groups. The glaucoma cases were examined after subconjunctival injection of adrenaline, the others after instillation of the usual mydriatics, and some also without use thereof.

I have myself examined 152 elderly people who did not show

signs of glaucoma. The examination was conducted at the same place and with the same apparatus as in case of the glaucoma patients, and in all cases the pupils were dilated by means of homatropine and cocaine.

The material falls into 3 groups:—

(1) 69 inmates of old age homes in Oslo, called in for examination for this special purpose. They comprised 44 women and 25 men and the distribution according to age was:—

50—60 years	...	4
60—70 „	...	12
70—80 „	...	41, of whom 4 had exfoliation.
80—90 „	...	12

Among these I found 4 cases of exfoliation. 2 of these had increased tension (several measurements) and, deducting them, the result will therefore be: among 67 inmates of old age homes without signs of glaucoma 2 were found to have senile exfoliation of the lens capsule.

(2) 30 patients from the Ophthalmic Section of the University Hospital and its out-patient department, treated for other diseases than cataract and glaucoma. They comprise 19 women and 11 men, divided into the following age-groups:—

60—70 years	...	9, of whom 1 had exfoliation.
70—80 „	...	15, „ „ 4 „ „
80—90 „	...	5
90—100 „	...	1

Here I found exfoliation in 5 patients.

(3) 55 patients, admitted to the Ophthalmic Section for operation for cataract. 35 women and 20 men, with the following age distribution:—

50—60 years	...	4
60—70 „	...	15
70—80 „	...	12, of whom 8 had exfoliation.
80—90 „	...	12, „ „ 2 „ „

Thus I found here 10 patients with exfoliation.

I can furnish no explanation of the remarkable fact that exfoliation is found more frequently in patients with cataract than in the inmates of old age homes, but other investigators have found the same results.

Lindberg examined the pupillary border in 142 patients with cataract and found exfoliation in 28 of them, or about 30 per cent. And Busacca examined 27 cataract patients, all over 60 years of age, and found exfoliation in 26 per cent. of them.

I have also examined 34 eyeballs excised in the dissecting room from the bodies of old people, whose eyes could not be examined before death. 13 were women and 21 men, and the age-distribution was:—

50—60 years	...	4
60—70 „	...	20
70—80 „	...	9, of whom 1 had exfoliation.
80—90 „	...	1

The cornea was cut away, the iris carefully removed and the whole of the lens surface and zonular fibres exposed and examined.

Here I found exfoliation in 1 case, that is to say, exactly the same frequency as I found among the inmates of old age homes.

On now comparing the results of my investigations regarding the occurrence of exfoliation we find the following facts:—

Among 150 patients operated on for glaucoma simplex I find exfoliation in 128 cases, or 85 per cent.

Among 43 patients, embracing all cases treated for glaucoma simplex in the Ophthalmic Section of the University Hospital during a certain period, examined under glaucosan mydriasis, I find exfoliation in 40, or 93 per cent.

Among 67 inmates of old age homes, without signs of glaucoma, I find exfoliation in 2.

Among 34 eyeballs excised from the bodies of old persons in the dissecting room I find exfoliation in 1 case.

Among 55 patients with cataract I find exfoliation in 10.

Among 30 hospital patients, without cataract or glaucoma, I find exfoliation in 5.

The difference in frequency of exfoliation in glaucoma simplex on the one hand and in old people without glaucoma on the other hand is so enormous that it cannot be explained away.

And it does not seem possible to find any other explanation than that senile exfoliation of the lens capsule must in some way or other be the cause of the form of glaucoma which we call glaucoma simplex.

EARLY OPHTHALMOLOGISTS IN CALCUTTA

BY

LT.-COL. E. O'G. KIRWAN, F.R.C.S.I., I.M.S.

PROFESSOR OF OPHTHALMOLOGY
MEDICAL COLLEGE HOSPITALS, CALCUTTA

DURING the régime of the Honourable East India Company the first properly organised Hospital, the Calcutta General Hospital, was established in 1790 in Calcutta. This was followed in 1792 by the opening of the Calcutta Native Hospital. The former is now represented by the present Presidency General Hospital, the latter was rebuilt and re-named and is now the present Mayo Hospital which was opened in 1874. The Calcutta Native Hospital appears to have been the first institution to provide scientific treatment for diseases of the eye, and even to this day, in spite of many other hospitals for the treatment of eye diseases, the Mayo Hospital still has the reputation among the inhabitants of Bengal as a place from which blind persons return with their sight restored.

Dr. John Shoolbred was the first Surgeon and Superintendent of the Calcutta Native Hospital and remained in charge of that institution from 1792-1816. In the year 1798 he published in the annual transactions of the hospital the treatment of two cases of cataract, twenty cases of phlegmon of the eyes and thirty cases of ophthalmia. He does not, however, give an account of the details of treatment. The number of eye cases reported in the annual hospital transactions steadily increased from year to year. He held the appointment of Superintendent and Surgeon to the Calcutta Native Hospital throughout his whole service, till he went on furlough in 1818 prior to retirement, with two intervals, one of furlough and the other when he acted as Superintendent General of Vaccination in 1806-1807.

Dr. Shoolbred obtained the Certificate of Surgeons in 1785, and served as Surgeon of the Indiaman "General Goddard" in 1789-90. He was commissioned as Assistant Surgeon in 1794, became Surgeon in 1807, retired in 1821 and died in 1831.

Official records dated October, 1816, show that operations for the relief of blindness, including cataract, were first done in Calcutta by Surgeon Thomas Luxmore. He applied to the Right Hon'ble the Governor General in Council for a grant and an allowance for the upkeep of the small hospital he established in Chowringhee in 1816 and pointed out that the various opportunities he had in the operation of cataract had afforded him the pleasing gratification of rendering the operation so successful as generally to restore the sight of those who were blind from any species of cataract from the infant born in that state to the adult in the

advanced period of life, provided there was no other defect in the organs of sight. He mentions that Drs. Cochrane and Leny, of the Medical Board, Bengal, inspected minutely the cases of cataract in his hospital and were pleased with the results of the new mode of treatment. The Governor General in Council, the Right Hon. Francis, Earl of Moira, K.G., sent in the application of Dr. Luxmore to the Medical Board in Calcutta asking if an institution could be established for boys from the Orphan and Free Schools to be instructed by Dr. Luxmore in the mode of extracting cataracts, and in the treatment of other diseases of the eye. Dr. R. Leny, Secretary of the Medical Board, replied that the Medical Board was of the opinion that no advantage could be gained from instructing young men from the Orphan and Free Schools in the mode of performing the operation for the cure of cataract and for the treatment of other diseases of the eye. From the delicacy as well as the complicated structure of the organ not only are the operations to be performed on it of a fine and difficult nature, but the proper treatment of its diseases requires an extreme range of knowledge. It appears, therefore, more necessary in respect to the eye more than perhaps any other organ of the human body that its professional management should be confined to persons better informed and more skilful than boys from the Orphan and Free Schools. It is likewise proper to remark that boys could not at present be furnished for such a purpose by these establishments, for a number of boys, not less than fifty, is now required for completing the new hospital establishment and a very small proportion of them can be supplied.

The matter was referred to Dr. John Shoolbred, the Surgeon Superintendent of the Calcutta Native Hospital as to whether he considered a ward contiguous to the Native Hospital could with advantage be constructed for the reception of natives affected with cataract and other diseases of the eye. He replied that as there were prejudices amongst many patients remaining as indoor patients, there was no necessity at present as cases of cataract and other chronic affections of the eye requiring operation, so long as they were not contagious and could remain in the common ward without danger to anyone, could be accommodated in some of the spare cots which were always available in the hospital. He also was of the opinion that before the new ward was erected exclusively for diseases of the eye the necessity for it should be satisfactorily established by experience and this could easily be done if the Surgeon in charge of the hospital were directed to keep a register of eye patients for 12 months, separate from that of other patients and to ascertain by this means how many cases of diseased eyes in that period would require or derive benefit from such separate accommodation and how many would avail

themselves of it were it offered to them. If the number of the latter were sufficient to warrant the expense of an additional ward, it would then be time enough to erect it. If not, eye cases would, of course, continue to be received as they have hitherto been as house or out patients at their own option, when not improper to mix with others, for any idea of compelling them to remain in hospital contrary to their own wish would be the certain means of deterring many from applying for relief at the hospital who might otherwise have derived benefit from it, both in these and other complaints. The first separate account of eye patients submitted was from September 1, 1816, to August 31, 1817. In the Government Gazette dated December 19, 1816, the following appears:—" A person blind received sight by the means of a surgical operation performed by Dr. Luxmore, who removed a cataract which was the cause of blindness."

Dr. Thomas Luxmore was born March 13, 1774. Assistant Surgeon September 8, 1813, M.R.C.S. 1820, Surgeon May 23, 1825. Died at Lucknow, October 2, 1828.

In 1825, Mr. Surgeon Breton, Superintendent of the Calcutta Medical Institution, presented to the Governors of the Native Hospital a tract on the eye and its appendages and another on cataract, for the use of the assistants at the Native Hospital and its subsidiary dispensaries. These were written in Hindustani, in the Persian and Nagree character and were intended for the use of the students of the Native Medical Institution in Calcutta. These tracts were printed in lithography. The Calcutta Medical Institution was founded in 1822 and Surgeon Breton was the second Superintendent. As Superintendent of the Native Medical Institution he taught the senior students the native mode of operating for cararact, as he was convinced by positive proof that this method, on account of its extraordinary simplicity and efficacy, was the safest for the students to adopt. It is on record that a Mussalman practitioner operated successfully on eleven patients in his presence. In 1826 he wrote an article on the native method of couching. He was an author of repute. In the annual records of the Calcutta Native Hospital from 1816 onwards mention is made of cases of cataract admitted for treatment. Eye diseases were classified under four headings, viz., nyctalopia, cataract, phlegmon of the eyes and ophthalmia.

Dr. Peter Breton was appointed Assistant Surgeon August 27, 1801, Surgeon August 22, 1814. He gave up promotion to Superintending Surgeon to retain his appointment of Superintendent of the Native Medical Institution in 1826. He died in Calcutta on November 18, 1830.

When Dr. John Shoolbred resigned the post of Surgeon and Superintendent of the Calcutta Native Hospital in 1816 he was

succeeded by Dr. Simon Nicolson. Crawford says of Nicolson, he was the best known medical man of his time in Calcutta, perhaps we might say, of any time. He was born on July 5, 1779, in the Manse of Kiltarlity, Inverness, Scotland, of which parish his father was minister, and was educated at St. George's Hospital, London, where he was House Surgeon in 1801, M.R.C.S. 1802. He was assistant to Sir Everard Home in private practice until 1805 and was succeeded in that post by Sir Benjamin Brodie when the post fell vacant through Nicolson's acceptance of an appointment in India. He was appointed to the Madras Medical Service in 1806, but never joined that Presidency, being gazetted to the Bengal Medical Service as Assistant Surgeon in the Calcutta General Hospital. Except for one period of leave to the Cape, he spent the rest of his service and life in Calcutta. From 1807 to 1816 he served in the Calcutta General Hospital and in 1816 he succeeded Dr. John Shoolbred as Superintendent and Surgeon of the Calcutta Native Hospital, and during his time the number of eye cases treated in the Calcutta Native Hospital steadily increased from year to year. Unfortunately the annual reports show no details of treatment. In the records his name appears frequently as being associated with the teaching of students in the diseases of the eye. He and Dr. James Ranald Martin were amongst other examiners in the first final examination for the diploma issued by the Medical College, Calcutta, in 1838. At this examination eleven students presented themselves and four passed. He retired from the post of Surgeon and Superintendent of the Calcutta Native Hospital in 1830 on the grounds of ill health and was appointed a Governor of this Hospital by the Governor General in Council on the recommendation of the Board of Governors of the Calcutta Native Hospital in appreciation of his work for that Institution. Early in 1833 he went on two years' leave to the Cape. On his return in 1835 he was posted as Surgeon to the Calcutta European Hospital and held that post till he died twenty years later. In 1839 he was gazetted Superintendent Surgeon but was allowed to decline promotion and to retain his appointment in Calcutta. He retired on August 1, 1855, and died in Calcutta a week later on August 8, 1855, at the age of 76 years.

It was Nicolson who first brought James Ranald Martin into notice, recommending him in 1823 to the Governor General, Lord Amherst, to be sent to Hyderabad to treat Sir Charles Metcalfe, the Resident there, who was seriously ill. In 1830 Martin succeeded Nicolson as Superintendent and Surgeon of the Calcutta Native Hospital. He also took charge of Nicolson's practice while he was at the Cape.

Nicolson left no published works and nowadays he is almost forgotten, a mere name, but no officer in the I.M.S. ever stood

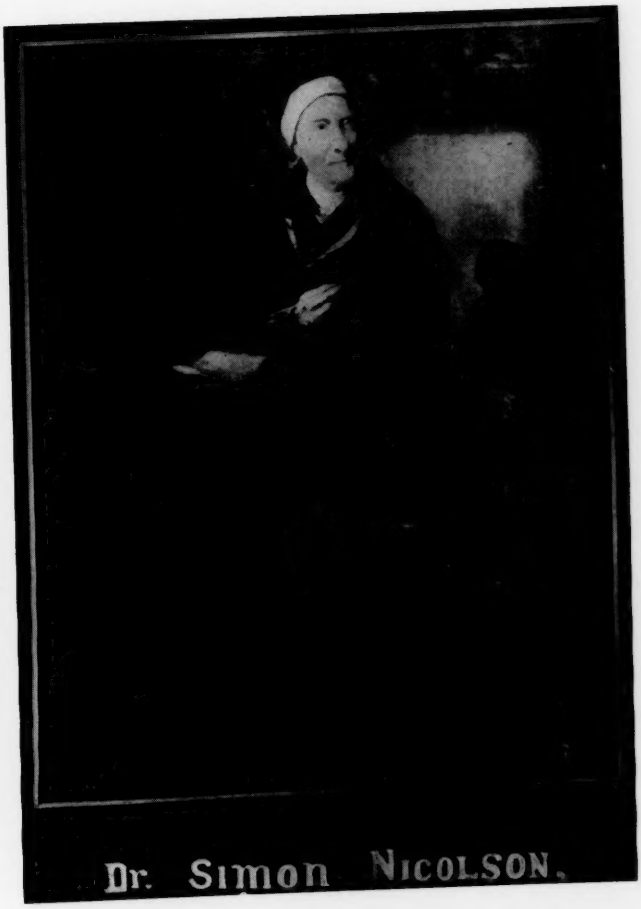
higher in the public and private estimation of his contemporaries. Sir John Kaye has described him under the name of Nicholas Fitzsimon in a long-forgotten novel " Peregrine Pulteney." A retired Bengal civilian in the novel speaks of him as follows:— " Nicholas Fitzsimon, everybody knows him in India—finest fellow in the world—kind, generous, trump of a fellow. Now I'll tell you, go to him—give you breakfast, tiffin, dinner, shelter, advice, everything. If you are sick, go to him, sure to cure you —sure to be kind to you—saved more lives than the invention of the lifeboat—a most excellent fellow—good Samaritan—sure to love him."

A picture of Nicolson, seated in a chair, hangs in the rooms of the Calcutta Asiatic Society and a photograph of this painting is published with this article.

The late C. R. Wilson, in his Descriptive Catalogue of Paintings in the possession of the Asiatic Society of Bengal, quotes two other references to Nicolson, which should be reproduced here. " His practice was only limited by the impossibility of performing more than a certain amount of work within a certain space of time. One carriage was always kept waiting, day and night, to enable him to attend to any call without delay."

In accepting his resignation, the Governor General, Lord Dalhousie, wrote to him as having long possessed:—" In a measure rarely equalled, the confidence and reverence of your professional brethren, the universal respect and esteem of the community amongst whom you have passed your days and the approbation and gratitude of the Government, to whose service you devoted a long course of valuable labours."

Dr. Simon Nicolson was succeeded in 1830 as Surgeon and Superintendent of the Calcutta Native Hospital by Dr. James Ranald Martin, one of the greatest medical men of his time in India and in the annual records of the Mayo Hospital mention is made of large numbers of eye cases that were treated during his time as Surgeon and Superintendent and it is of interest to know that the earliest official records of glaucoma in Calcutta are found in the old records of the Calcutta Native Hospital in 1830, in the year that Martin succeeded as Surgeon and Superintendent of that Institution. In that year James Ranald Martin records the treatment of four cases of sudden acute inflammation of the eyes with widely dilated pupils and included these in a list of 113 cases of ophthalmia, as at that time all inflammatory diseases of the eye were still classified under the general heading of ophthalmia. Definite mention of glaucoma treated by operation is found in the records of the department of Ophthalmology of the Calcutta Medical College when Dr. Archer was the Surgeon in charge, 1858-1870. The number of eye cases coming for surgical



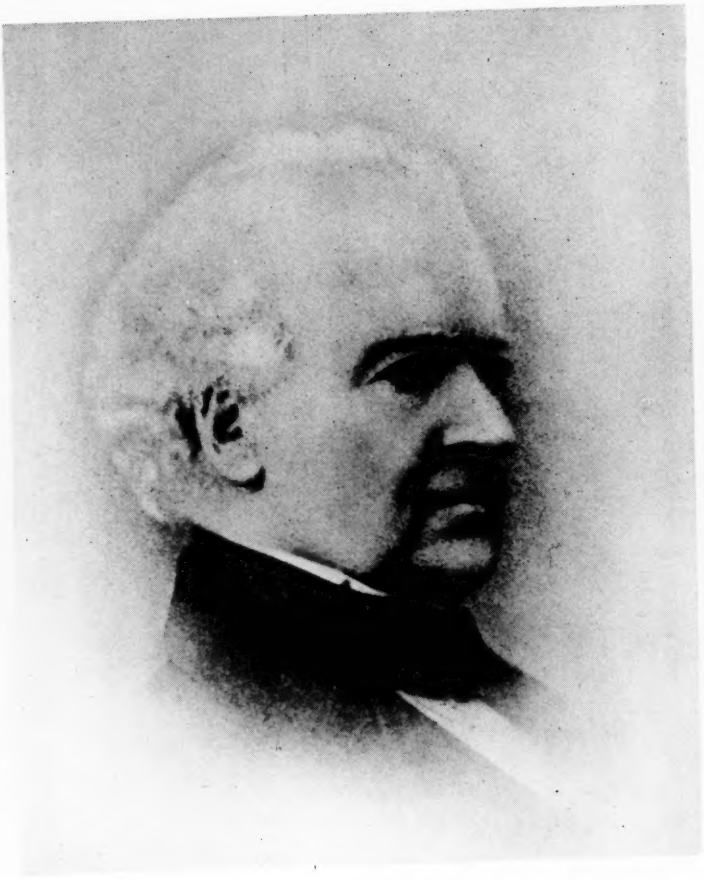
Dr. Simon Nicolson.

1779—1855

UNIV. OF MICH.

DR. C. C. EGERTON—
1798-1885

SURGEON GOVERNOR GENERAL'S BODYGUARD, 1821



SIR JAMES RANALD MARTIN—
1870

relief for glaucoma in those days was few and the popular belief was that operation on a glaucomatous eye was of no benefit except perhaps to allay pain. In the year 1835 the Calcutta Medical College with its associated hospitals was established and in the records of these institutions the earliest eye work mentioned was in 1840 and the name of Dr. Martin is associated with it. He was the first part-time Professor of Ophthalmology at the Medical College, Calcutta. He was the first to practise injections of iodine in the cure of hydrocele. A ward in the original Medical College Hospital, which was erected in 1848, was called the Martin Ward, to commemorate his services to humanity in Calcutta.

In 1839 he resigned the office of Surgeon and Superintendent to the Calcutta Native Hospital and the Governors of that Institution expressed themselves as follows:—"The Governors feel great regret at being called upon to accept your resignation, and particularly at the cause which has led to your retirement; at the same time they feel deeply sensible of the valuable services you have rendered to the institution over which they preside, of the great professional skill which for a period of more than nine years you have displayed in attendance on the native sick entrusted to your care, and of the zeal and ability you have constantly shown in offering numerous and important suggestions for the improvement of the institution over which you were placed."

To the Governor of Bengal they wrote:—"We take leave on this occasion to lay before you, Honorable Sir, copies of our correspondence with Mr. Martin, in the belief that it will be a source of satisfaction to Government, contributing as it does largely to this charitable institution, that it should be informed how very highly we appreciate the past services of Mr. Martin."

His friends and patients, at a meeting presided over by Sir John Peter Grant in the Town Hall, presented him with an address signed by over one hundred of the leading inhabitants, European and native, of Calcutta, and a gift of plate to the value of four hundred guineas.

On retirement from India in 1842 James Ranald Martin rapidly became a prominent figure in the medical world in England. He was appointed a member of the Health of Towns Commission and to him is due one of the most valuable appointments that was ever made in England, that of Medical Officer of Health. He sat on the Royal Commission to enquire into the conditions of the Royal Army Medical Department and was instrumental in founding the Army Medical School at Netley. His labours so benefited the Army that James Ranald Martin was widely spoken of as the soldiers' friend. His whole life was one of activity and usefulness and, whether in his public capacity or later in life in the private exercise of his profession, he was noted for the wisdom

and judgment which he manifested and for the influence for good which he exercised on all with whom he was brought into contact. The Martin Memorial Gold Medal, presented to the surgeon on probation who takes the highest place in Military medicine at the Royal Army School at Millbank, London, at the close of each session, was created to commemorate his memory in advancing the science of tropical medicine and sanitation in India and at home, with the inestimable result of improving the health and diminishing the death rate of the Army in India.

James Ranald Martin was born on May 12, 1796, and was a pupil of Sir Everard Home, as well as of Sir Benjamin Brodie at St. George's Hospital, London. He was appointed Assistant Surgeon, Indian Medical Service, Bengal establishment, on September 5, 1817. Surgeon to the Bodyguard of the Governor General 1821-1826. Surgeon to the Governor General 1828 and Surgeon to the garrison of Fort William 1828. Appointed Surgeon of the Calcutta Native Hospital 1830. Retired 1842. Elected F.R.C.S. 1843. F.R.S. 1845. Appointed examining Physician to the Secretary of State for India 1859-1864. C.B. 1860. Knighthood 1860. President Medical Board, India Office, 1864 (when the Board was first formed) to 1874. Died in London November 27, 1874. Author of Medical Topography of Calcutta, 1830. Article on Hospitals in Holmes' System ot Surgery, 1864.

In the History and Traditions of the Moorfields Hospital by Treacher Collins, mention is made that in 1824 Mr. C. J. Egerton, who had studied ophthalmology under Travers in the London Eye Infirmary, was sent to Calcutta, where he founded an Eye Hospital. This must be Charles Chandler Egerton, who was appointed to the I.M.S. as Assistant Surgeon in 1823. The eye hospital which was formerly situated at the junction of Wood Street and Theatre Road, Calcutta, on the present site of the Saturday Club and mentioned in old records, was probably started by him, but his name does not appear as holding a prominent position in ophthalmology. Bengal Civil Order No. 33 of February 1, 1837, shows that Assistant Surgeon C. C. Egerton was appointed Professor of Surgery and Clinical Surgery to the Calcutta Medical College. He held that position until he went on furlough in 1842 and was succeeded by Surgeon E. W. W. Raleigh.

Charles Chandler Egerton was born in April, 1798. Studied at Guy's and St. Thomas' Hospitals. M.R.C.S. 1819. Appointed Surgeon August 1, 1837. F.R.C.S. (elected) 1844. Retired January 31, 1847, and died in England on May 4, 1885.

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RETINO-CHOROIDITIS RADIATA

BY

T. HEWITSON BROWN, M.B., CH.B.(Edin.)

(FROM THE EYE CLINIC OF THE RIGSHOSPITAL IN COPENHAGEN. CHIEF: PROFESSOR ROENNE)

THE following case of retino-choroidal atrophy presents such unusual features as to make it worth recording.

The patient, V.F., aged 47 years, government clerk, was admitted in June, 1937, to the Skin Department of this hospital, on account of alopecia areata of one year's duration. He stated that he had been short-sighted since his 13th year. In 1916 he joined the Danish Army, but shortly afterwards was admitted to hospital on account of symptoms suggestive of spondylitis tuberculosa. He was also found to be suffering from "choroiditis disseminata," for which he received 3 weeks' treatment and was discharged from the service. From that time until a year ago he remained in good health, and had noticed no alteration in his powers of vision. During the past year, apart from alopecia areata, he has suffered from frontal sinus infection and from sciatica. He states that several of his close relatives, including brothers and sisters, have died of tuberculosis.

Examination.—A well-built, intelligent man of healthy appearance. Extensive alopecia areata in the occipital region. Where hair is present it is partly white, partly pigmented, in patches.

Eyes.—Anterior segments normal. Tension normal. Fundi: the two eyes present an identical appearance. The discs are normal, with circumpapillary atrophy of one to one and a half discs' diameter; within the atrophic area there are small scattered spots of pigment. Arteries rather narrow. Partially confluent with the area of circumpapillary atrophy, extending peripherally almost to the equator, and centred on the retinal veins like beads on a string, there are numerous patches of choroidal atrophy, sometimes of dead white colour, sometimes showing narrowed remnants of the larger choroidal vessels; within these atrophic areas there are large prominent punctate masses of pigment which generally ensheathe the vessels but sometimes lie deep to them. The atrophic areas are one to one and a half discs' diameters in breadth and follow the distribution of the retinal veins so exactly that in many places where the latter bifurcate so do the former. They are in most instances bounded by retina of normal appearance, but here and there they are partially demarcated by a narrow zone of pigment. In addition, those parts of the veins where no atrophy is present are in many instances delineated by a sheath of pigment. One single atrophic patch is not centred accurately on

Right eye (indirect method).

a vein, but lies contiguous with it. Fields of vision: slightly contracted, with scotomata corresponding to the atrophic areas, but with no demonstrable nerve fibre bundle defects extending to the periphery.

Vision: *1912:* r.e. 6/60; −3.00 D.sph. 6/9.
l.e. 6/60; −3.00 D.sph. 6/9.
1937: r.e. −2.50 D.sph. and −1.00 D.cyl. ax. 25° 6/9.
l.e. −2.50 D.sph. and −1.00 D.cyl. ax. 10° 6/9.

von Pirquet test positive. No evidence of syphilis. Adaptation test not carried out on account of patient's refusal.

Commentary.—The unique feature of the case is the exact localisation of all the patches of choroidal atrophy along the course of the retinal veins. No similar case could be traced in the literature; only one case of active unilateral choroiditis (de Schweinitz[1]) showed a similar distribution: "the exudate began 2 discs' diameter from the optic papilla and followed the sweep of the retinal vessels particularly as they passed downwards and outwards, as well as upwards."

The fields of vision, particularly the absence of nerve fibre bundle defects, prove that the innermost layer of the retina—that is, the layer in which the retinal veins lie—is relatively intact; and

the presence of choroidal vessels in the atrophic patches proves that some at least of the choroid is also preserved. It is generally accepted that the original lesion in choroiditis lies in the chorio-capillaris, though occasionally similar lesions may occur in the retina (Gilbert[2]). Fuchs[3], however, points out that we may easily derive a false impression as to the relative frequency of choroidal and retinal lesions from the fact that the latter are easily overlooked, whereas the former, since they cause gross pigmentary disturbances, are at once evident. The presence of such retinal lesions may be assumed (1) when the retina is particularly cloudy in the neighbourhood of the active focus, when there are small haemorrhages and when the retinal vessels are obscured, (2) in the presence of cloudiness of the retina at a distance from the focus, around the papilla and along the large vessels, (3) in the presence of sector-shaped defects in the fields of vision pointing to damage of the nerve fibres at the site of the focus, and (4) when permanent changes, confined to the pigment layer, remain after the active inflammation has subsided (Fuchs, l.c.).

In the case under discussion we have unfortunately no record of the ophthalmoscopic appearance while the disease was active; after the passage of 21 years conditions (3) and (4) are not fulfilled.

Yet there can be no doubt that the retinal veins were responsible for the distribution of the retino-choroidal atrophy. Since there is no metabolic activity between the larger vessels and the surrounding tissues, there must have been some disease process occurring in the vessel walls themselves or in the accompanying lymphatics, which, spreading from them, affected chiefly the deeper layers of the retina and the superficial layers of the choroid. If this was the course of development of the atrophy, then the original lesion must have been located in the retina. The only other possibility is to assume that some wide-spread pathological process occurred in the choroid and retina, but that it entirely resolved except where the retinal veins exercised an unfavourable influence, which again could only be in the nature of disease of the vessel walls or of the lymphatics, creating a *locus minoris resistentiae*. In either case it is astonishing that so little damage should have been sustained by the nerve fibre layer of the retina.

The case is obviously and essentially different from " choroiditis disseminata " in which the haphazard distribution of the atrophic patches is a constant feature, though of course the pigment may commonly be found ensheathing the retinal veins.

Chorio-retinitis (Jensen) can hardly be compared with the disease under discussion; it is unilateral, generally confined to one juxta-papillary lesion, and invariably characterised by the permanence of the nerve fibre bundle defects.

Several authors, particularly Japanese (Koyanagi[4], Komoto[5]), have noted a connection between uveitis, vitiligo and alopecia which is generally indistinguishable from alopecia syphilitica. This patient's skin condition was that of typical alopecia areata, also in the pigmentary disturbances which accompanied it; and the lapse of 20 years makes it extremely improbable that there is any factor common to his two diseases.

One disease, periphlebitis tuberculosa, is localised along the retinal veins in the manner mentioned; it is accompanied by vitreous haemorrhages and commonly leads to retinitis proliferans. This man, with his bad family history as regards tuberculosis, and with his positive reaction to tuberculin, may well have been the subject of a tuberculous periphlebitis which instead of taking its usual course and affecting the vitreous, has spread outwards towards the choroid; and this hypothesis is tentatively put forward as a possible explanation of the case.

I should like to express my thanks to Professor Roenne for his permission to publish this case. The accompanying sketch is also his work.

Summary

A case of retino-choroidal atrophy is described in which the atrophic areas are confined to the immediate proximity of the retinal veins. No similar case could be traced in the literature. One is compelled to conclude that it is a disease *sui generis*, for which the name retino-choroiditis radiata is suggested.

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TARSITIS SYPHILITICA

BY

M. KHALIL

CAIRO

Introduction

(*a*) *Various syphilitic affections of the lid.*

Quoting from Connell and others: It may be said that all cases of syphilis of the eyelid are unusual, because this disease rarely manifests itself by a lesion in this location. Zeissl reported that of 40,000 cases of syphilis examined, only eight had lesions of the

eyelids. The lesions of all three stages have been reported. The chancre occurs on the skin of the lids and on the conjunctiva both palpebral and bulbar. Transmission is frequently by kissing. According to Fuchs, infection is conveyed to children by nurses, who sometimes moisten the agglutinated lids with saliva, and also by the practice of licking foreign bodies out of the conjunctival sac with the tongue.

" Secondary lesions of the lids have been reported in the form of papular syphilides and copper coloured patches."

(*b*) *Rarity of tertiary syphilitic affections of the lid.*

Tertiary lesions are the rarest of all, and to give an idea about this, I think, I cannot do better than quote Heckel and Beinhauer in an exhaustive article on the subject published in the "Archives of Ophthalmology," Vol. LIV.

A gumma, strictly confined to the eyelid, is a rare condition when one considers the frequency of syphilis and the frequency of gummata elsewhere in the body.

Max Joseph states that gummata of the eyelids are uncommonly met with. Bull reports, " Little is said of syphilis of the eyelids because lesions are better recognised and treated and are not common." Zeissl described 8 cases of syphilis of the eyelid in 40,000 cases of syphilis, reporting 2 cases from Arlt's ophthalmic clinic. He stated, " gummata of the eyelids are not common, but when involving the conjunctiva or tarsal cartilage are extremely rare. Clapp states that tertiary lesions are frequently seen as a general thickening—tarsitis—while the circumscribed tumefaction —gumma—is the rarest of all specified lesions." Hutchinson reports, " This is so rare that one, even in our large clinics, will see it seldom."

Narich reports a ratio of 1 in every 10,000 cases of syphilis showing a gummatous involvement of the eyelids. Dornig states the published cases of tertiary syphilis of the eyelids are very few and the same idea is held by Juliusberger. Bull remarks, " Such modern writers as Arlt, Zehender, Bader, Wells, Heisung, Graefe, Fuchs and Schweiggner make the rarest reference to it." de Schweinitz admits it is not a very frequent condition.

Vancea, describing his case of vegetative or polypoid type of tarsitis, in 1927, has estimated the cases of tarsitis reported up to that date to be 25 only.

Types

(*c*) *The four types of syphilitic tarsitis are*:

1.—*The Marginal*:—Characterised by ulceration, leading to deformity of the lid margin and partial or complete destruction of the lashes.

2.—*The Nodular*:—Characterised by circumscribed thickening at the site of which deep ulceration soon develops. When seen before necrosis takes place, gummata bear a very strong resemblance to chalazia, but nearly always progress towards the skin and leave the conjunctival surface normal.

3.—*The Diffusely Infiltrated*:—Diffuse swelling of the tarsus of one or more of the eyelids.

4.—*Vegetative or Polypoid*:—First described by Vancea in 1927 as a small rose-coloured, painless and slightly pedunculated tumour, arising from the conjunctival side of the tarsus and resembling a Meibomian epitheloma.

The marginal type, described by Morax under the varieties of tarsitis, is described by Poulard as a syphilitic ulcerative condition of the skin of the lid-margin unpreceded by indurations; Whiting denies that it affects the tarsal plate.

While syphilitic tarsitis is usually a painless condition, those reporting gummata have generally found it associated with considerable pain.

Fuchs, Parsons, Roemer, Poulard, de Schweinitz and other authorities consider tarsitis syphilitica as a gummatous infiltration of the tarsus, in a diffuse manner.

The diffusely infiltrated type to which my case belongs is usually described as follows, quoting from *Bull*:—

"When diffuse, the whole lid is swollen and usually other symptoms of syphilis are present. When the tarsus appears infiltrated, the name 'tarsitis syphilitica' has been given. The infiltration is then chronic and indolent and is usually located in the upper lid. There is no pain or sensation. The tumour is hard, resisting, and is characterised by an induration of board-like consistency. The overlaying skin is of a reddish colour. The lid cannot be everted and ptosis is present. The swelling is homogeneous and the overlying skin is not usually involved."

Age, Onset and Mode of Infection

As young as 2 to 3 months, patients were reported suffering from tarsitis, which got cured under anti-syphilitic treatment.

Whiting mentions in his article, that most of the cases described appear to have been in adults, and to have been the result of acquired syphilis, but several cases at an early age, from 2 to 9 months, were the result of hereditary syphilis.

Signs and Symptoms

To sum up, the signs and symptoms of tarsitis syphilitica are:—

1. Very gradual development.
2. Skin freely movable over tarsus; tense and reddened when condition has reached its acme.

3. Normal appearance of conjunctiva.
4. Absence of pain.
5. Ptosis usually well marked.
6. Tendency to falling out of eyelashes.
7. Tarsus enlarged, as could be verified upon palpation, of cartilaginous hardness and ungainly form.
8. Eversion of lid almost impossible, due to enlargement of tarsus.
9. The lymphatic gland in front of the ear of same side swells up.
10. Other signs in the globe, as old keratitis, iritis or peripheral disseminated choroiditis may be present.

Diagnosis

In pre-Wassermann days a histological examination of a fragment of the swelling revealing a round celled infiltration helped in the diagnosis which was confirmed by antisyphilitic treatment.

Nowadays a positive laboratory result makes the diagnosis easy. It should be borne in mind, however, that in the late tertiary stages the Wassermann reaction can be obtained only in about two-thirds of the positive cases. The tests for tubercle are not always reliable. Hence the importance of differential diagnosis based on clinical data. Signs of syphilis or tubercle accompanying the eye condition should be looked for.

The diagnosis of the nodular type, before it breaks down, has to be differentiated from that of any other nodular condition, *e.g.*, chalazia or styes and adenomata of the Meibomian glands. Some writers, *e.g.*, Whiting, consider the picture of the syphilitic type sufficiently characteristic to prevent confusion.

When ulceration has taken place the condition of epithelioma and tubercle has to be excluded. Ulceration from the conjunctival surface simulates tubercle of this membrane.

Pathology

If cut into, the cartilage is found transformed into a lardaceous tissue with scanty blood supply.

The histopathology of tarsitis syphilitica as described by Hugo Feilchenfeld in his case and confirmed by Greeff is as follows:—

"Histologically the epithelium shows itself almost normal. The site of the disease is the tarsus whose tissues are completely infiltrated with fresh small cells. These cells arrange themselves in two long parallel rows, which by separating the connective tissue fibres of the tarsus look like newly formed lymph vessels. The blood vessels are greatly increased, and seen to be dilated.

No change, worth mentioning, is noticed in the walls of the blood vessels. Media and intima are normal, only the adventitia seems to be greatly thickened in few small arteries.

" Besides this, more or less diffuse infiltration there appear two separate sharply defined infiltrations lying directly under the conjunctiva, that is, the most superficial part of the tarsus, which prove to be composed of densely arranged equally coloured cells with dark stained nuclei."

My Case

F.D., a female, aged 65 years, came to my section, at the Qalawoon Eye Hospital, on June 8, 1935.

Past History:—Patient suffered from enlargement of glands in the axilla for the past three years, for which she underwent a surgical operation; glandular enlargement all over the body followed the operation. When light treatment for three months with guarded prognosis was suggested she refused.

She had thickening of all four lids, with ptosis of both upper lids, the eversion of which was impossible.

Two photographs (one before treatment and another after), taken by Dr. M. O. El Rifaiy, our laboratory colleague, are reproduced.

Before treatment.

After treatment.

The blood report was positive + + + for syphilis.

There were no keratitis, iritis or choroiditis, as is sometimes reported to accompany the lid condition.

Prognosis

After the swelling has been, for weeks, maintained at the same height, if untreated it disappears very slowly, until the tarsus has reached its former volume, or has even, in consequence of atrophy, fallen somewhat below it. It takes several months for the disease to run through its course (Fuchs). Under specific treatment, however, the condition resolves itself very promptly.

Treatment

Potassium iodide and mercury inunctions in the treatment of syphilitic tarsitis were used in the cases reported.

Paton mentions the inefficiency of doses less than 30 grains, three times a day, and emphasises the importance of such liberal doses, as evidenced by him from a case of the nodular type in a young woman.

In my case the treatment was carried to a definite cure within a period of 2 months; 4·2 grams of neobismusalvan (Richter's bismuth preparation) and 6 ampoules of mercury cyanide amounting to 6 centigrams were given. Potassium iodide in the normal doses followed as a matter of routine.

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TREATMENT OF HERPETIC KERATITIS WITH VITAMIN B

BY

J. NITZULESCU *and* ECATERINA TRIANDAF

FROM THE OPHTHALMOLOGICAL CLINICS, SCHOOL OF MEDICINE, JASSY, ROUMANIA

DIRECTOR: PROF. ELENA PUSCARIU

THE recent progress in the study of vitamins helps us to understand better the various aspects of slight or latent hypo-vitaminosis, which occur in association with the most different clinical manifestations, and positively influence their evolution.

Such cases appear to be much more frequent than was previously suspected, and their recognition becomes a question of great importance in our European countries, where the typical syndrome of avitaminosis is rarely met, and therefore the eventual manifestations of vitamin insufficiency can easily remain hidden and ignored.

This seems to be especially the case of vitamin B1. Its recent synthesis, and the new possibilities of preparing it in sufficient amounts have promoted numerous essays of therapeutic trials. Different authors have studied its influence in various digestive syndromes, its active intervention in the troubles of carbohydrate metabolism (diabetes), etc.

Considering the rôle of vitamin B1 in the causation and in the cure of beriberic polyneuritis, some authors, beginning with Minot, Strauss and Cobb, were lead to try its action in other nerve diseases of various aetiology.

In fact, encouraging results have already been obtained in the treatment of alcoholic polyneuritis (Strauss, Blankenhorn and Spies,

Jolliffe and Colbert, Sciclounoff, Russel, Levi Valensi, J. Besançon and Klotz), of the neuritis of pregnancy (Theobald, Stahler), of diabetic and diphtheritic neuritis (Sciclounoff) and of the systemic degeneration of the spinal cord, associated with macrocytic anaemia (Russel, Lasch, Bergel). Scröder and Herman reported good results in the treatment of retrobulbar neuritis.

We have also had the opportunity to follow the favourable influence of vitamin B1 in a case of bilateral trigiminal neuralgia. The patient presented at some time an incipient neuro-paralytic ulcer in the left cornea, subsequent to alcohol injections in the corresponding trigeminal nerve, which had been made before the beginning of the treatment with vitamin.

Betaxin suppressed the pains on the right (unalcoholised) side, and seemed to have also a good influence on the keratitis, arresting its progress. We could not follow the patient further, but this led us to try the vitamin treatment in another nervous, corneal disease, characterised by its dreadful pains and stubborn resistance to usual treatment, herpetic keratitis. Chance enabled us to follow almost at the same time two cases, admitted to the ophthalmological clinics, and the results obtained encouraged us to publish the following observations:

(1) Olt, I., aged 16 years, entered the clinics on June 11, 1937, suffering with gonorrhoeal conjunctivitis.

History.—Gonorrhoeal urethritis lasting since six months. One week ago conjunctival congestion of the left eye, two days ago palpebral oedema and purulent discharge. On admission, the patient shows the characteristic picture of acute gonorrhoeal conjunctivitis. Bacteriological examination of the discharge was positive. The cornea appears exfoliated.

Course and treatment.—The disease yielded quickly to the treatment with $AgNO_3$, argyrol, mercurochrome, and vaccine-therapy. (Three injections of antigonococcic vaccine 0·1, 0·3 and 0·3 c.c. given the 12, 14 and 16 of June.) All injections were followed by fever reaching 39°C. On June 13, the palpebral oedema was much reduced, the fibrinous membranes disappeared. On June 14, the chemosis also disappeared and the cornea became perfectly clear. On June 15 no more secretion could be seen.

After only three days, on June 18, the patient complained again of severe headache, periorbital pain and photophobia. On examination we found: R.E., the cornea shows a few vesicles spread over its surface, not staining yet with fluorescein. Left cornea showed superficial erosions, very little infiltrated, staining in places with fluorescein and giving the image of a small ramified tree branch. The sensibility of the right cornea was normal, that of the left reduced. Our diagnosis was bilateral corneal herpes.

The usual treatment, anti-neuralgic powders and urotropin, did not

show any appreciable result. During the night the pain was intolerable, the patient could not sleep for a moment. On June 19 all anti-neuralgic treatment was given up and we began the injections with vitamin B1. The patient has received as a whole 6 mgr. of Betaxin (Bayer) *i.e.* on June 19, 1 mgr., on June 20, 2 mgrs., on June 21, 2 mgrs., and on June 22, 1 mgr.

From the first day of treatment the pain was much reduced. The patient could sleep quietly all night and only towards morning felt again some discomfort. The local lesions underwent quick, progressive healing. On June 20, we saw: R.E., little erosions have taken the place of the vesicles, L.E., fluorescein is retained in two spots. On June 21, R.E., fluorescein no more retained. Cornea perfectly clear. L.E., fluorescein no more retained. A single spot of infiltration exists. Between June 23 to 29 this infiltration became progressively reduced in size and density. The patient left the clinics with his left cornea nearly clear. The visual acuity of the left eye which had diminished during the disease to 1/10 increased to 1/2 on the day of discharge from the clinics.

(2) Maria R., aged 33 years, entered the clinics on June 25, 1927.

History.—Nebula on the right cornea, dating since she was three years old, and due apparently to an inflammatory affection. One month ago she complained of an intense left hemicrania with blurring of the vision and ocular congestion. Was seen in the out-patient department of our clinics for a few days and the diagnosis was keratitis herpetica of the left eye.

The treatment with yellow mercuric precipitate, continued at home for a whole month, did not bring much change. The pains have increased, she cannot sleep during the night.

On examination, R.V., 1/6; L.V., 1/8. Intense left hemicrania, photophobia, perikeratic congestion reaching to the limbus. On the cornea two superficial erosions, very little infiltrated, with irregular polycyclic outline. The one which is superior has the appearance of a leaf. They retain fluorescein. The sensibility of the cornea is much reduced.

Evolution and treatment.—We continued the local applications of mercuric precipitate, atropine and adrenalin. At the same time we began the injection of Betaxin. The first injection was given on June 25. The following night the patient slept well. The local pains persisted but were much reduced. On June 26 she received 2 mgrs. Betaxin, on June 27, 28 and 29 1 mgr. each day. The subjective amelioriation persisted and improved. The local pains and photophobia diminished gradually. On June 30 the fluorescein was no more retained. The corneal infiltration appeared to be much reduced. Vision 1/2. On July 5 the vision was increased to 2/3 and the infiltration had nearly disappeared.

Discussion.—Both cases suggest a favourable action of vitamin

B1. In the first case of herpes, occurring after a gonorrhoeal ophthalmia, in connection perhaps with the fever, all the phenomena were arrested at once and recovery followed shortly. Considering the usual protracted evolution and the resistance to treatment of the disease, the actual evolution of this case seems to be quite suggestive. The second case had already a history of nearly one month, in which the ordinary therapeutic measures seemed to have little influence. The patient entered the clinics with intensive acute symptoms and again all these phenonema receded quickly simultaneous with the vitamin treatment. In both cases the disappearance of the subjective troubles has been especially impressive and quick. The patients could sleep quietly the night after the first injection when previously they had to sit up, due to their severe pains.

How should we explain this favourable influence? In the case of an ordinary alcoholic polyneuritis the authors are inclined to admit the existence of a real hypovitaminosis B1 due, partly to deficient diet, partly to insufficient digestive absorption. Alcoholic gastritis should impair the absorption of vitamin B1 and prepare a latent deficiency. In fact, Jolliffe has seen in alcoholic addicts that oral treatment with vitamin B1, is less active than injections and that the results are to a certain extent proportionate to the doses utilised.

In some instances the need for vitamin and its utilisation seems to be above the ordinary supply. The neuritis of pregnancy is thus explained by Theobald. Various troubles in the metabolism of carbohydrates seem to increase also the need for vitamin B1. Perhaps this could be the explanation of the diabetic polyneuritis. Levy Valensi, J. Besançon, Klotz and Silberschmidt think that such metabolic troubles (perhaps accumulation of lactic or pyruvic acid) occur in any neuritis and this is the process on which the vitamin exerts its correcting influence.

To what extent can these explanations be applied to our cases? A real alimentary hypovitaminosis seems improbable to us and the absence of digestive troubles excludes an insufficient vitamin absorption. The fever, which perhaps has conditioned the appearance of herpes in the first case, lasted for too short a period to explain a real exhaustion of vitamin reserves.

We do not consider therefore the manifestations of herpes as a process of hypovitaminosis. In such cases we are inclined to attribute to the vitamin the action of a real medicament, exerting a specific influence, functional and trophic on the nerves, which can be injured by very different aetiological agents.

Wolbach has pointed out clearly this functional action of vitamin B1. Even in beri-beri the anatomical lesions of polyneuritis do not seem directly due to avitaminosis, but rather to the starvation which is associated with it. The beri-beri animal recovers functionally in a few hours after the treatment with vitamin B, while the lesions

of polyneuritis last a much longer time afterwards. This spectacular recovery proves the direct influence of vitamin B1 on the activity of the nerves. We believe that the nerves injured by the localisation of the herpetic virus benefit from a supplement of vitamin B1 just as a diseased myocardium benefits from the action of digitalis.

If this was true, the number of clinical syndromes associated with nervous troubles, which could be favourably influenced by a vitamin B1 treatment, should become more numerous, leaving out any consideration of patent or latent avitaminosis.

Summary

In two cases of keratitis herpetica, one incipient and the other of a duration of a month, the parenteral treatment with vitamin B1 (Betaxin) (amounting to 6 mgrs. in each case) brought a rapid, suggestive amelioration of the pain and seemed to stop the progress of local lesions, greatly accelerating their cure. Certainly these two cases alone are insufficient for definite conclusions. We believe, however, that they represent more than a simple coincidence and encourage us to propose the treatment with vitamin B1 in cases of herpetic keratitis and generally in all painful and neurogenic affections of the cornea.

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STEREOSCOPIC CARDS IN COLOUR FOR CHILDREN—Series B*†‡‖

BY

CONRAD BERENS, M.D.

NEW YORK, N.Y.

Series *B* is the second of two series of stereoscopic cards for the use of children in hand or other stereoscopes, especially in the junior and senior models of the correcteyescope and the rotoscope. This series is adapted to children under five years of age. Series *A* (previously demonstrated, *Trans. Amer. Ophthal. Soc.*, 1937), is suited to the interests of children five years of age and older. In series B, objects, animals and characters which interest children and with which they are familiar are depicted in colour.

The cards may be useful in rapidly estimating the degree of vertical and lateral heterophoria, the presence of high degrees of aniseikonia, and in determining the presence or absence of first, second or third grade binocular vision. Furthermore, the cards are of value in developing first, second and third grade binocular vision as well as lateral and vertical amplitude of fusion in patients with heterophoria and heterotropia (Figs. 1, 2 and 3).

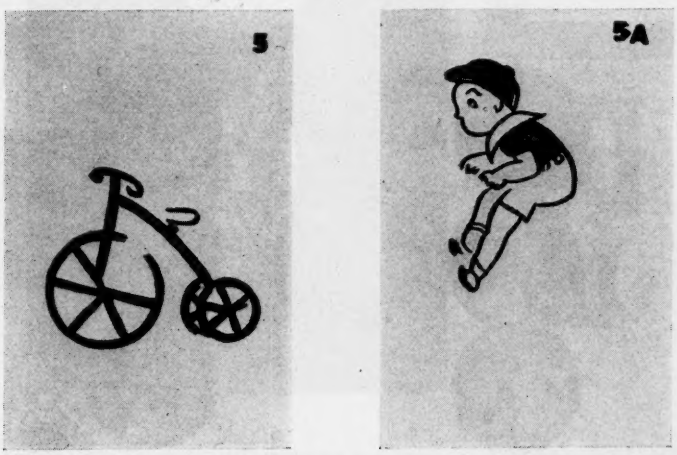

FIG. 1

Cards 5 and 5A show a boy riding a tricycle. The subject is one concerning which various stories may be told, thus increasing a child's interest. These cards are useful in determining the degree of first grade binocular vision.

* Presented before the Section on Ophthalmology, American Medical Association, June 7-11, 1937, Atlantic City, New Jersey.

† Drawings by Miss Patricia Rainier.

‡ Distributed by A. Haustetter, Inc., New York City.

‖ Aided by a grant from the Ophthalmological Foundation, Inc.

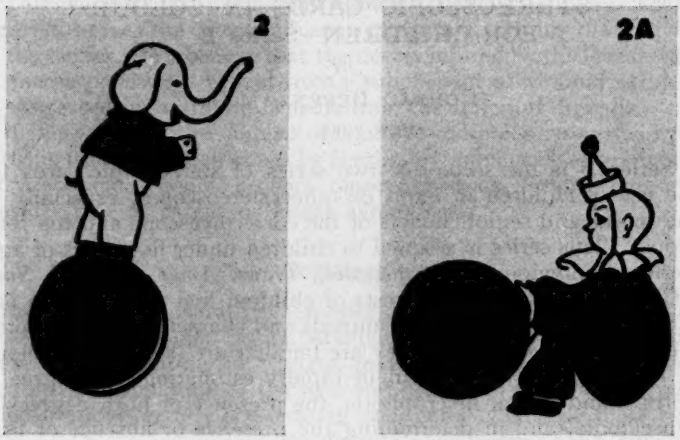

FIG. 2.

Cards 2 and 2A, depicting an elephant and a clown are valuable in determining the degree of second grade binocular vision in small children. This subject interests young children and the large control marks aid in maintaining fusion range.

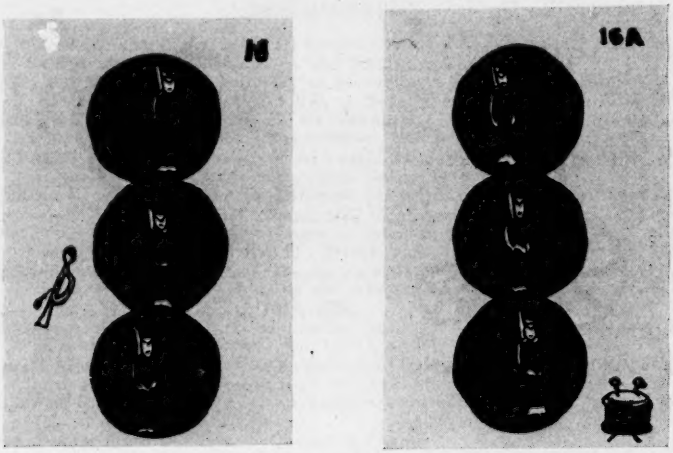

FIG. 3.

Cards 16 and 16A may be used for determining stereopsis. The top soldier when fused is seen stereoscopically, while the middle soldier is not stereoscopic and the lower soldier is in a pseudoscopic position.

The courtesy of the Walt Disney Company for permission to use several of their popular characters is gratefully acknowledged.

A CHART FOR TESTING THE VISUAL ACUITY OF AMBLYOPIC CHILDREN AND ADULTS*†‡

BY

CONRAD BERENS, M.D.

NEW YORK, N.Y.

THE need of a chart containing figures as well as letter *E's* to test highly amblyopic children and adults prompted the drawing of this chart. The chart is especially valuable in testing children of three years of age or younger, because they can easily recognise the figures.

FIG. 1.

Front view of the chart for testing the visual acuity of amblyopic children and adults.

FIG. 2.

Back view of the chart.

* Presented before the Section on Ophthalmology of the American Medical Association, June 7-11, 1937, Atlantic City, New Jersey.

† Aided by a grant from the Ophthalmological Foundation, Inc., and developed with the co-operation of the Department of Motor Anomalies of the New York Eye and Ear Infirmary.

‡ Drawings by Miss Patricia Rainier.

The following figures have been used: a cat, 500 foot (152·40 M.); a dog, 350 foot (106·68 M.); and a clown, 200 foot (60·96 M.).

As an additional and possibly more scientific test 500 foot, 350 foot, and 200 foot *E's* appear on the reverse side of the chart

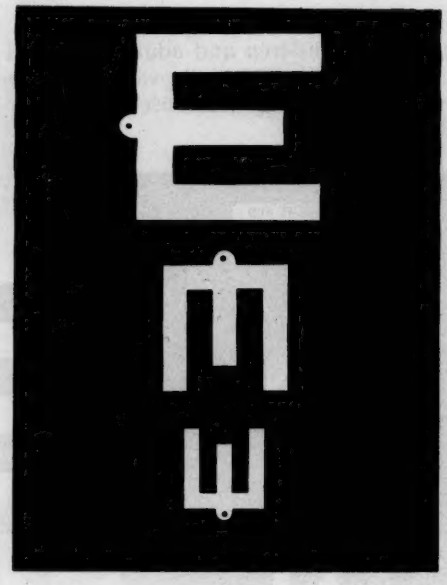

FIG. 3

Metal "E's."

(Figs. 1 and 2). In order to test the child's knowledge as well as visual acuity smaller drawings of the cat (100 feet, 30·48 M.), dog (70 feet, 21·33 M.), and clown (40 feet, 12·19 M.), are included in the chart. Furthermore, *E's* have also been placed beside these figures.

To facilitate the testing of visual acuity, especially for the use of children, each chart is supplied with 500 foot, 350 foot and 200 foot detachable *E's* which are made of metal (Fig. 3).

ABSTRACTS

MISCELLANEOUS

(1) **Frieberger, Moses (New York).—The gold ball implant.** *Arch. of Ophthal.*, May, 1937.

(1) **Frieberger's** article contains some useful hints on the performance of the Frost-Lang operation. He divides the conjunctiva by passing the point of a knife round the limbus, and then undermines it back to the equator. Each of the recti is caught on muscle forceps and sutured with 0 0 0 catgut to the conjunctiva. Double-arm sutures are used being passed from the under surface of the muscle through the conjunctiva to emerge 5 mm. from the cut margin. The ends of the sutures are left long, held by an artery forceps and laid to one side. After the eye has been proptosed and removed, the socket is packed with cotton wool, moistened with hot saline until haemorrhage is completely controlled, when a dry pack is substituted for it. The edge of Tenon's capsule is picked up with tissue forceps, and a 0 0 0 chromicised catgut suture is introduced from below 2 mm. behind the centre of the cut margin. The suture is carried to the opposite margin and introduced from below in a similar manner and left untied. Similar sutures are inserted at 2 mm. intervals. The packing is removed and a gold ball whose diameter should not exceed 14 mm. is inserted. The capsule sutures are tied and owing to their method of introduction the margins of the capsule are made to overlap. A continuous reinforcing catgut suture is inserted in the capsule and the conjunctival wound closed with No. 2 braided silk. The ends of the catgut sutures which united the muscles to the conjunctiva are loosely tied and the operation is finished.

F. A. W-N.

(2) **Bell, Julia, and Haldane, J. B. S.—The linkage between the genes for colour-blindness and haemophilia in man.** *Proc. Roy. Soc.*, Vol. CXXIII, Series B, No. 831, July, 1937.

(2) It is well established that colour-blindness and haemophilia are due to sex-linked genes. These genes appear to manifest themselves in all males who carry them. In women the gene for haemophilia is probably always recessive, the cases of alleged haemophilia in heterozygous women being very doubtful. On the other hand, colour-blind women whose putative fathers are not colour-blind occur too frequently to be explained by illegitimacy. So colour-blindness is probably not always recessive. On the other hand, women homozygous for the gene appear always to be colour-blind.

In this paper four new pedigrees are described in which cases both of colour-blindness and of haemophilia occur. Two pedigrees already published are considered. In three of the six pedigrees haemophilia appears to have arisen afresh by mutation.

The genes for colour-blindness and haemophilia are closely linked. The probability that the results attributed to linkage could have arisen by sampling is less than 4×10^{-6}. So far only one case of crossing-over has occurred, and even this is not absolutely certain, as the mother of the man in question may possibly be a mosaic due to somatic mutation. It is estimated that the frequency of crossing-over is as likely to lie below 5 per cent. as above it.

The linkage here investigated is so close that on quite a small amount of material it has been possible to demonstrate its existence without leaving grounds for reasonable doubt. If such close linkage is typical of the human species, the search for further cases will be an easier task than appeared probable at first sight, and its results will be of considerable practical value.

If an equally close linkage were found between the genes determining blood group membership and that determining Huntingdon's chorea, we should be able, in many cases, to predict which children of an affected person would develop this disease, and to advise on the desirability or otherwise of their marriage.

Meanwhile, as a means to the mapping of the X-chromosome, it is desirable that all persons suffering from any disease showing sex-linked inheritance, and their brothers, should be examined for colour-blindness, and if possible, for anomalous trichromatism. Since about 8 per cent. of males in north-western Europe show one or other of these defects, the search should be fruitful.

W. J. B. RIDDELL.

(3) **Kurz, O. (Prag.).—Symmetrical iris tumours. (Symmetrischer Iristumor).** *Klin. Monatsbl. f. Augenheilk.*, Vol. XCVIII, p. 476, 1937.

(3) **Kurz** describes a case of symmetrical tumours of the iris in both eyes of a young woman. The growth originated in the region of the pupillary membrane of which some remnants were present. As in each eye the tumour was very slow growing, and examination by the gonioscope showed that it was confined to the iris and there was no scattering of pigment, it was removed by an iridectomy. Histologically the growth was compact, with little pigment and numerous fine walled vessels. It did not invade the dilator muscle or the ciliary body. It resembled an endothelioma. The author suggests that it originated from mesodermal tissue—possibly iris "endothelium."

D. R. CAMPBELL.

BOOK NOTICE

Developmental Abnormalities of the Eye. By IDA MANN, D.Sc., M.B., B.S., F.R.C.S. With a Foreword by Sir John Parsons, F.R.S. 8vo, with 37 Coloured Plates and 284 Illustrations. The Cambridge University Press. For *The British Journal of Ophthalmology*, 1937. Price, 50s.

The fourth book to be published for this Journal by the Cambridge University Press is Miss Mann's "Developmental Abnormalities of the Eye." It is a very fine volume and reflects the greatest credit on all concerned in its production. The book is the logical successor to the author's "Development of the Human Eye," which was published for this Journal nine years ago.

The present work is not by any means a bare catalogue of aberrations and Miss Mann is to be congratulated on having brought order out of chaos in many instances.

The arrangement is mainly on an anatomical basis. As Miss Mann says: "It must be realized that few abnormalities are absolutely localised to one tissue." For the ophthalmologist it is obvious that if he wants to refer to an abnormality of, say, the iris, it will be easier to find it under such a classification, than if one based on purely embryological grounds or on the time of appearance of the defect had been adopted.

The first 45 pages of the work deal with general considerations. In them are discussed the mechanism of the production of developmental abnormalities, human and comparative embryology, teratology and foetal pathology, experimental embryology and genetics. This chapter is full of interest. It is followed by sections on deformities of the skull involving the orbits; abnormalities affecting the eye as a whole; abnormalities of the fundus, in two parts; the iris, in two parts; the second containing a section on the vitreous; the lens; the cornea; the conjunctiva and sclera; the lids, lacrymal apparatus and orbital contents. A bibliography and the index are appended.

The illustration of a cyclops illustrates well the *monstrum horrendum, informe, ingens, cui lumen ademptum*, of the third Aeneid. It would have distressed the ancients to learn that a cyclops is not viable.

In dealing with congenital incomplete colour-blindness, Miss Mann states: "There is, however, no inherent impossibility in the arrest of the cones in man at some foetal stage short of complete differentiation which might lead to diminished appreciation of frequency differences." And, speaking of Oguchi's disease: "It is as if the governing factor which determines the final differentiation

characteristic of the species had been removed, so that characters normally associated with different general somatic development were free to appear. The disease thus stands almost alone as an example of complete departure from the normal with retention of reasonably good function. This would be expected in an atavistic condition."

Each abnormality is described in detail with its pathogenesis. Miss Mann states and criticises all probable hypotheses and, while giving due credit to the views of others, she is never afraid of stating her own. A good example is found on p. 338 when discussing Vogt's anterior axial embryonic cataract. Vogt, among other suggestions, has postulated that the maldevelopment begins at a time when the anterior ends of the fibres are beginning to form the anterior suture. He also states "that the exact time of this is not known." Miss Mann goes on: "From direct observations on human embryos the time of the first appearance of the suture can be placed fairly accurately. There is no trace of it in embryos of 26 mm., but it is definitely present at 35 mm. This places its time of appearance between the 7th and 8th weeks of intra-uterine life, but an abnormality in fibres which are being formed at that time will only account for opacities outside the central dark area. Those within it must have occurred earlier. It seems much wiser to suppose that there is some slight disturbance acting over a longish period, since fibres formed at any time between the 13 mm. and 35 mm. stage seem to be equally involved."

No one can doubt the importance of an adequate knowledge of developmental abnormalities to the ophthalmologist. To give an example. we recall hearing of a young man who had received some eye injury, who found on his out-patient card a note of the presence of opaque nerve fibres, which he attributed to his injury. Counsel would find it impossible to shake the evidence of an ophthalmic surgeon in such a case by any amount of cross-examination.

The value of the text of this book is enhanced by the large number of illustrations. These have been well reproduced and exceedingly well chosen.

We have noticed very few mistakes in the letterpress, but there are a few slips which should be corrected, if. as we hope will be the case, the book goes to a second edition. Under "Coppock" cataract the reference to Nettleship and Oliver should be corrected to Nettleship and Ogilvie. (Mentieth Ogilvie, not Montieth Oliver.) Priestley Smith's name has been misspelt. On page 193 the date of Laurence and Moon's original paper is given as 1886, it should be 1866. On page 282, in dealing with incomplete persistence of pupillary membrane, the context would seem to demand "aqueous" for "vitreous." The "u" in Bruch and Kruckenberg is not modified and we were under the impression that Krukenberg was the more

usual spelling. These few points do not in any way detract from the value of a work which will be found to be indispensable to all practising ophthalmologists and sheds lustre on British Ophthalmology.

Eyestrain and Convergence. By N. A. STUTTERHEIM, M.D.(Rand). Pp., X-90. Published by K. K. Lewis and Co. 1937. Price, 7/6.

Readers of Stutterheim's monograph on "Indications for the Kinetic Treatment of the Eyes" (*Brit. Jl. Ophthal.*, Supplement Vol. XV, 1931) will be already familiar with its author's views on the aetiology and treatment of eyestrain. The volume under review recapitulates these in a concise and readable manner and adds the results of further experience and investigations. The thesis is that eyestrain, although attributable in part to uncorrected errors of refraction, is in the main due to defective convergence and is remediable by measures directed to remove this deficiency. It is not sufficient however, for a patient to possess a convergence power adequate to bring the eyes into a condition of orthophoria at reading distance he must also have a considerable reserve power, as shown by his ability to overcome the diplopia produced by prisms up to 50° base out in front of the eyes, in distant vision.

In this book, the author considers the question of asthenovergence (*i.e.*, defective power of convergence) from various aspects, the physiological, the anatomical, the clinical and the therapeutic, and makes out a good case for its importance as a cause of eyestrain. He gives full details of his methods of treatment and of the results achieved, the latter are most satisfactory and would appear to warrant a wider recognition of Stutterheim's views than they have hitherto received. The reviewer has for some years past used Stutterheim's methods with considerable success, in cases of asthenopia unrelieved by correction of error of refraction and feels that the time has come to submit the matter to critical investigation. This could easily be carried out in one of the squint clinics attached to an ophthalmic hospital and the results might be of value.

There is no doubt that Stutterheim has blazed a new trail in ophthalmology and any ophthalmic surgeon who wishes to follow it will find much to stimulate his interest in the book under review. One could for instance join issue with the author as to the use of the adjective "involuntary" in defining the convergence power he aims at producing. The reviewer, in common, with at least two others who have successfully employed Stutterheim's methods during the past few years, feels that the convergence is essentially voluntary and finds that a cure of asthenovergence is effected when the patient is able to produce at will, diplopia of distant objects by means of convergence.

CORRESPONDENCE

To the Editors of THE BRITISH JOURNAL OF OPHTHALMOLOGY.

DEAR SIRS,—In view of the fact that a Contact Lens Centre has now been opened at 18, Cavendish Square, we feel it will not be out of place to say how the Centre came into being.

Soon after the introduction of contact lenses, ophthalmic surgeons came to realise the difficulty of securing a satisfactory fit between a spherical surface of glass and the aspherical surface of the eyeball.

In 1931 one of us heard of Dr. Dallos' work, went over (later) to Budapest to investigate it, and saw clearly that this method gave promise of producing successful results. Subsequent visits were made by all of us which confirmed this view, and during these we obtained practical instruction in the technique. It was at once obvious that considerable practice and skill were required in order to obtain a successful result. Moreover, repeated attendances were necessary by the patient and it was frequently necessary to make several new trial lenses before a fit was secured. Therefore the original scheme of taking moulds in this country, sending them to Budapest and obtaining in return a contact lens of the same shape as the mould, was impracticable.

We all felt that it ought to be possible to produce satisfactory lenses in London. Dr. Dallos solved the problem by approaching Messrs. Hamblin and agreeing to take charge of the manufacture of contact lenses. This he has been doing for the last six months under a temporary scheme.

It was felt from the beginning that this work should be made available for all ophthalmic surgeons and that its performance should be under their immediate control. It is for this reason that we have secured accommodation at 18, Cavendish Square, where any ophthalmic surgeon will be able to carry out, or supervise, the fitting of his patients with contact lenses.

The running of a centre such as this presents many new problems and difficulties, and we have been fortunate in securing the services of an advisory committee of ophthalmologists, including Sir John Parsons, Sir William Lister, Messrs. Paton, Foster-Moore, McMullen and Wing-Commander Livingston.

The scheme is at present in its infancy and further developments are envisaged. For example,

A Samaritan Fund for hospital patients.

Courses of instruction in the theory and practice of fitting contact lenses, and research in various directions.

The entire funds of the Centre will be administered by the advisory committee for the furtherance of these objects.

DR. MED. S. HOLTH

UNIV. OF MICH.

The scheme has been submitted to and approved by the Ethical Committee of the British Medical Association.

This preliminary note is published in the hope of enlisting the sympathetic co-operation of our colleagues in what promises to be an important branch of ophthalmology and one which has so far been neglected in this country.

Yours very truly,

A. RUGG-GUNN.
F. A. WILLIAMSON-NOBLE.
IDA MANN.

18, CAVENDISH SQUARE,
LONDON, W.1.

OBITUARY

DR. MED. S. HOLTH

Not only northern ophthalmology but also the whole ophthalmological world has suffered a great loss by the death of S. Holth, on September 23, from apoplexy, at the age of 74 years.

Holth passed his medical qualification in December, 1891, and his M.D. degree in 1896, after having practised as an ophthalmologist in Drammen for about four years. His thesis: "Die indirecte Starrblindheit des normalen Sehorgans und die Bedeutung derselben bei Gesichtfeld-untersuchungen" and his deductions were based on the material he had collected in Drammen. He then settled down in Oslo after having passed about one year abroad at different European eye clinics. In this town he had his practice till he retired some two years ago.

For a period of six years he was first assistant at the University eye clinic and acted as *locum tenens* for Professor Hjalmar Schiötz when he was absent. When Professor Schiötz resigned, his chair was offered to Holth but this, owing to a progressive otosclerosis, he found it better to decline.

Through many repeated visits to foreign clinics Holth continued —even to his last years—at his studies. He also was invited to other Universities and clinics to demonstrate his own new methods of operating or to read papers about them. In this manner he went to Oxford, Helsingfors, Stockholm and, as late as 1932, to Budapest.

His power of work was phenomenal. More than 110 of his scientific publications cover all branches of ophthalmology but his chief interest was his study of glaucoma. Here he has, in his iridencleisis operation, left himself a *monumentum aere perennius.*

Holth was in all respects a brave man and a gentleman. He never was afraid to give to his opponent the honour he deserved when he found his opponent was right. As a curiosity of his immense operative practice may be cited the fact that, as far as is known, he was the only ophthalmological surgeon who had ever—with good result—performed a reclination operation for cataract on a living lioness.

Holth was a man with many interests besides his medical studies. He had many sincere friends.

He was a regular contributor of papers to this Journal and we always looked upon him as our friend.

NOTES

Appointments

MR. R. FOSTER MOORE, O.B.E., has been elected Consulting Ophthalmic Surgeon to St. Bartholomew's Hospital.

MR. RUPERT SCOTT has been elected Ophthalmic Surgeon to St. Bartholomew's Hospital.

MR. KEITH LYLE has been appointed Assistant Ophthalmic Surgeon to the National Hospital, Queen Square.

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Ukrainian Institute of Experimental Ophthalmology

THE building which is to house the new Ukrainian Institute of Experimental Ophthalmology has just been completed. It stands near the sea front at Odessa on a site of 35,000 square metres and contains some 200 rooms. The opening of it will take place on January 1, 1938. Said to be an institution unique of its kind not only in the U.S.S.R. but in the world, the Institute will have twelve research laboratories, a clinical department of 100 beds, isolation wards, sub-departments for biochemistry, morbid anatomy, etc. The Institute is fitted up with the most perfect modern apparatus, and will have an experimental workshop attached to it for the production of such complex instruments as used formerly to be imported from other countries.

FUTURE ARRANGEMENTS

1937

December 7.—Midland Ophthalmological Society, at Birmingham Eye Hospital (Middlemore Lecture).

December 10.—Section of Ophthalmology, Royal Society of Medicine (Clinical Meeting).

December 17.—North of England Ophthalmological Society, at Leeds.

1938

January 14.—Section of Ophthalmology, Royal Society of Medicine.

January 21 and 22.—North of England Ophthalmological Society, Prof. von Rohr's lectures at Sheffield University.

February 4.—North of England Ophthalmological Society, at Newcastle-upon-Tyne.

February 11.—Section of Ophthalmology, Royal Society of Medicine.

March 4.—North of England Ophthalmological Society, at Liverpool.

March 11.—Section of Ophthalmology, Royal Society of Medicine (Clinical Meeting).

April 1.—North of England Ophthalmological Society, at Sheffield.

June 10.—Section of Ophthalmology, Royal Society of Medicine (Annual Meeting).

July 7-9.—Oxford Ophthalmological Congress, at Oxford.

CONTEMPORARY OPHTHALMIC LITERATURE

American Journal of Ophthalmology. *October, 1937.*

FRIEDENWALD. Contribution to the theory and practice of tonometry.

ALLEN. Staphylococcic conjunctivitis.

HILGARTNER, H, HILGARTNER, L. and GILBERT. A preliminary report of a case of keratoconus, successfully treated with organotherapy, radium, and short wave diathermy.

HICKS. A stable non-irritating solution of physostigmine salicylate.

JACOBS. Spherophakia, luxation of lenses, and secondary glaucoma relieved by extraction of lenses.

Annales d'Oculistique. *September, 1937.*

VEIL and DESVIGNES. A case of sarcoma of the choroid of seven years duration having started with a central scotoma.

CHARLIN. Essential neuralgia (?) trigeminal (ophthalmic branch) from bacillary toxaemia ; tuberculin therapy.

PUSCARIU. Syphilis ignored in senile cataract.

Archiv für Ophthalmologie. *October, 1937.*

SERR. Analysis of cases of spontaneous pulsation in the retinal vessels.

SCHUBERT. Intra-ocular fusion mechanism.

SALLMANN. The formation of pigment ring lines in the iris.

REICHLING, WALTHER and KLEMENS. Vascularized conjunctival tissue between the epithelial pigment of the retina and the lamina vitrea.

MOTEGI. A haematological study of parenchymatous keratitis and congenital lues.

BAKKER. Are the club cells in the uvea altered chromatophores and so mesodermal in origin?

SALLMANN. The anatomy of vascular decussation in the fundus.

SERR. The monochromatic light of the sodium lamp as the source of light for ophthalmoscopic examination.

DE RAADT. Diabetic retinitis. Remarks on the like-named work of Reinhard Braun.

OSTWALT. Further remarks on my " New theory " of anastigmatic spectacles.

Zeitschrift für Augenheilkunde, *September, 1937.*

SALZMANN. External iridectomy.
FLEISCHANDER, I. Metastatic lid tumours.
RADNOT. The difference between periphlebitis retinalis and thrombo-angiitis obliterans retinae.
FRIEDE. Ointments for the conjunctival sac.
GIFFORD. The question of Parinaud's conjunctivitis, the nature of the disease described.
PILLAT. Reply to the preceding article.
CASSUTO. Bipolar bacilli causing conjunctival affection.
OHM. Extraction of senile cataract with a small hook.

Klinische Monatsblätter für Augenheilkunde. *September, 1937.*

VOM HOFE. Experiences with homeopathic remedies in eye diseases.
PAVIA. Senile cataract. A new medical treatment.
BRECHER. The effective treatment of ophthalmo-blenorrhoea by means of vapour-spray therapy.
DERKAC. Antimony in trachoma.
NIZETIC. Arruga's dacryorhinostomy.
JESS. Temporary scleral drainage as an adjuvant remedy in the operation for retinal detachment.
MATSUDA. A manifestation of chalcosis bulbi and the extraction of an intra-ocular splinter.
STREBEL. Myopia and calcium metabolism.
GÜRICH. Congenital ectropion uveae in uniovular twins.
REISER. Remarks on the hereditability of glioma retinae.
VON PAPOLCZY. The prognosis of glioma retinae,
SCHEYHING. A rare case of angiomatosis changes of the retina.
SUGANUMA. The anatomical condition of thé globe with juvenile recurrent retinal and vitreous haemorrhages, which are associated with tuberculous sclero-keratitis.

Bollettino d'Oculistica. *August, 1937.*

NICOLATO. 175 cases of dacryocystitis operated on by Dupuy-Dutemps' method.
BIETTI. Bullous keratitis with rare post-operative complications after cataract extraction.
RUBINO. Hypophyseal adenoma with optic-chiasma arachnoiditis. (Clinical, therapeutic and pathogenetic contribution.)
BORSOTTI. Ocular incidents following a blood transfusion.
PESCE. Bilobular cyst of the iris of traumatic origin.
AGNELLO. Contribution to the knowledge of rare anomalies of the lacrymal passages. "A case of recurrent permeability."

September, 1937.

MOTOLESE. Contribution to the study of tuberculosis of the conjunctiva.
SMALTINO. Clinical and histological contribution to the study of primary epithelioma of the cornea and its conditions of development.
RUSSO. Neuro-epithelioma of the retina.
TRISTAINO. Contribution to the study of tuberculosis of the conjunctiva. (Anatomico-clinical and aetiological considerations in relation to Parinaud's conjunctivitis.)

Archivos de Oftalmologia de Buenos Aires. *July, 1937.*

PAVIA. Intra-ocular foreign body. Its retinographical history.
PAVIA and TARTARI. Multiple circumscribed tears.
MALBRÁN. Fuchs's epithelial dystrophy and glaucoma capsulare.
VON GROLMAN. Hereditary luetic and traumatic parenchymatous keratitis.
FORTIN. Presentation of an entoptoscope. Tequeno's model.
ORIBE. Orbital emphysema with diagnostic conclusions.
PUIGGARI, ORIBE and MALENCHINI. Orbital topography.

Revista Cubana de Oto-Neuro-Oftalmologia. *Jan.-Feb., 1937.*

YANES. The prescription of light.
FINLAY. The actual status of the operative treatment of retinal detachment.